

Notice of Allowability

Application No.

10/665,151

Applicant(s)

AGARWAL ET AL.

Examiner

Art Unit

Hoai v. Pham

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/03/2007.
2. ☒ The allowed claim(s) is/are 2,3,5,6,8-11,23,28,39,44,77,80,81,84 and 85.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


HOAI PHAM
PRIMARY EXAMINER

DETAILED ACTION

Examiner's amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. The application has been amended as follows:

In the Preliminary amendment to the specification dated 09/22/2003:

After "09/495,719, filed on February 1, 2000," insert --now U.S. Pat. No. 6,667,502,--.

Allowable Subject Matter

3. Claims 2-3, 5-6, 8-11, 23, 28, 39, 44, 77, 80-81, and 84-85 are allowed.

4. The following is an examiner's statement of reasons for allowance: the prior of record fails to disclose the combination of a semiconductor device structure recited in the base claim(s), including the combination of the structure of: a vertical space between said brace and said semiconductor substrate, wherein the brace comprises a dielectric material (claims 2, 9, 10, 11, 23, 28, 84-85); a brace transversely extending between and laterally supporting respective lateral sides of at least two of the microstructures, wherein the microstructures comprise generally solid cylindrical shapes and the brace comprises a microbridge structure, and wherein there is a vertical space between said brace and said semiconductor substrate (claim 39); a brace transversely

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extending between and laterally supporting respective lateral sides of at least two of the microstructures, wherein the microstructures comprise stud capacitors, and wherein there is a vertical space between said brace and said semiconductor substrate (claim 44); a brace transversely extending between and laterally supporting respective lateral sides of at least two of the microstructures, wherein the capacitor microstructures comprise capacitor studs, wherein there is a vertical space between said brace and said semiconductor substrate (claim 77); at least one brace transversely extending between lateral sides of said at least two microstructures, wherein said at least two microstructures are supported only by said at least one brace, and wherein said at least one brace comprises a single material layer, and a dielectric layer between said semiconductor substrate and each of said at least one brace, where said at least one brace is vertically spaced from said dielectric layer (claim 80); a plurality of braces transversely extending between lateral sides of at least two of the microstructures for supporting the at least two of the microstructures, wherein the plurality of braces comprise a lattice support structure wherein said plurality of braces intersect at said microstructures, and wherein there is a vertical space between said support structure and said semiconductor substrate; and a dielectric layer between said semiconductor substrate and each of said plurality of braces, where said plurality of braces are vertically spaced from said dielectric layer (claim 81).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai v. Pham whose telephone number is 571-272-1715. The examiner can normally be reached on M-F.

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6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HOAI PHAM
PRIMARY EXAMINER